Only on Condenser Side

DOW

Material Safety Data Sheet

The Dow Chemical Company
Midland, Michigan 48674

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

24-Hour Emergency Phone Number: 517-636-4400

Product: DOWTHERM* SR-1 HEAT TRANSFER FLUID, DYED

Product Code: 25630

Effective Date: 10/20/95 Date Printed: 02/09/98 MSD: 000574

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ethylene glycol	CAS# 000107-21-1	>95%
Dipotassium phosphate	CAS# 007758-11-4	<3%
Water	CAS# 007732-18-5	<3%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

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* Colored liquid. Glycol odor. No significant immediate hazards for *
* emergency response are known. *
* *
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POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Vapors or mists may cause eye irritation.

SKIN: Prolonged or repeated exposure may cause slight skin irritation. May cause more severe response if skin is abraded (scratched or cut). A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated skin exposure to large quantities may result in absorption of harmful amounts.

INGESTION: Single dose oral toxicity is believed to be moderate. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis) and kidney failure. Small amounts swallowed incidental to normal handling operations

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are not likely to cause injury; however, swallowing amounts larger than that may cause serious injury, even death. Single dose oral toxicity is expected to be moderate to humans even though tests with animals show a lower degree of toxicity. The lethal dose in humans is estimated to be 100 ml (3 ounces) for ethylene glycol.

INHALATION: At room temperature, vapors are minimal due to low vapor pressure. If material is heated or mist is produced, concentrations may be attained that are sufficient to cause irritation and other effects.

CHRONIC EFFECTS:

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Excessive exposure may cause irritation to upper respiratory tract. Observations in animals include kidney and liver effects and deposition of calcium salts in various tissues after long-term dietary intake of ethylene glycol.

CANCER INFORMATION: Ethylene glycol did not cause cancer in long-term animal studies.

TERATOLOGY (BIRTH DEFECTS): Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation (tested nose-only in animals to prevent ingestion) or skin contact, the primary routes of occupational exposure, had minimal or essentially no effect on the fetus.

REPRODUCTIVE EFFECTS: Ingestion of large amounts of ethylene glycol has been shown to interfere with reproduction in animals. Specifically, growth retardation and decreased litter size in rats and mice and mating frequency in mice were observed.

4. FIRST AID

EYES: Flush eyes with plenty of water.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Consult medical personnel. Seek medical attention immediately.

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REGULATORY INFORMATION (CONTINUED)

is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

The CAS number(s) for TSCA is(are):
CAS # 000107-21-1
CAS # 007758-11-4
CAS # 007732-18-5

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
ETHYLENE GLYCOL	000107-21-1	NJ3 PA1 PA3

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).
PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).
PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

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SKIN: The LD50 for skin absorption in rabbits is >2000 mg/kg for a similiar mixture.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): In vitro mutagenicity studies were negative for ethylene glycol. Animal mutagenicity studies were negative for ethylene glycol.

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL DATA:

MOVEMENT & PARTITIONING: Based largely or completely on data for major component. Bioconcentration potential is low (BCF less than 100 or Log Kow less than 3). No relevant information found for remaining components.

DEGRADATION & TRANSFORMATION: Based largely or completely on data for major component. Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). No relevent information found for remaining components.

ECOTOXICOLOGY: Based largely or completely on data for major component. Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100 mg/L in most sensitive species). No relevent information found for remaining components.

13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: Any disposal practice must be in compliance with all federal, state/provincial, and local laws and regulations. State/provincial and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Regulations may also vary in different locations. Chemical additions, processing, storage, or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Waste characterization and disposal compliance are the responsibility solely of the party generating the waste or deciding to discard or dispose of the material. None of these waste management options should be considered "arranging for disposal".

As a service to its customers, Dow can provide lists of

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self-contained breathing apparatus and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Isolate and confine spill area. Spills may be a slipping hazard.

PROTECT THE ENVIRONMENT: Keep out of sewers, storm drains, surface waters and soil. Material is more dense than water and has infinite water solubility.

CLEANUP: Small spills: Soak up with absorbent material and scoop into containers. Large spills: Prevent contamination of waterways. Dike and pump into suitable containers. Clean up residual with absorbent material and wash with water.

7. HANDLING AND STORAGE

HANDLING: Avoid body contact. Provide adequate ventilation. Above flash point vapor-air mixtures will burn within flammable limits.

Spills of these organic liquids on hot fibrous insulations may lead to lowering of the autoignition temperature possibly resulting in spontaneous combustion.

STORAGE: Store in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Local exhaust ventilation may be necessary for some operations.

PERSONAL PROTECTIVE EQUIPMENT
EYE/FACE PROTECTION: Use safety glasses. If vapor exposure causes eye discomfort, use a full-face respirator.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as gloves, boots,

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